CALIBRATION STANDARD SPECIFICATION

FOR AN

AC LINE VOLTAGE REGULATOR

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PROCUREMENT PACKAGE

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CALIBRATION STANDARD SPECIFICATION FOR AN

AC LINE VOLTAGE REGULATOR

1. SCOPE

1.1 Scope. This specification defines the mechanical, electrical, and electronic characteristics for an AC Line Voltage Regulator. This equipme is intended to be used by Navy personnel in shipboard and shorebase laboratories to control AC line voltage. For the purposes of thi specification, the AC Line Voltage Regulator shall be referred to as t Regulator.

2. APPLICABLE DOCUMENTS

2.1 Controlling Specifications. MIL-T-28800, "Military Specification, Test Equipment for use with Electrical and Electronic Equipment, Genera specification for," and all documents referenced therein of the issues effect on the date of this solicitation shall form a part of thi specification.

3. REQUIREMENTS

3.1 General. The Regulator shall conform to the Type II, Class 5, Style E requirements as specified in MIL-T-28800 for Navy shipboard and shorebased as modified below. The use of material restricted for Navy use shall governed by MIL-T-28800.

3.1.1 Design and Construction. The Regulator design and construction shall meet the requirements of MIL-T-28800 for Type II equipment.

3.1.2 Power Requirements. The Regulator shall operate from a source of 94V to 138V at 60 Hz +/-5% single phase input power.

3.1.2.1 Fuses and Circuit Breakers. Fuses or circuit breakers shall be provided. If circuit breakers are used, both sides of the power source sh be automatically disconnected from the equipment in the event of excessi current. If fuses are used, only the line side of the input power line defined by MIL-C-28777 shall be fused. Fuses and circuit breakers shall readily accessible.

3.1.2.2 Power connections. The requirements for power source connections shall be in accordance with MIL-T-28800 with a 6 foot minimum length cord.

3.1.3 Dimensions and Weight. Maximum dimensions shall not exceed 19 inches in width, 6 inches in height, and 16 inches in depth. The weight shall n exceed 70 pounds.

3.1.4 Lithium Batteries. Per MIL-T-28800, lithium batteries are prohibited without prior authorization. A request for approval for the use of lithi batteries, including those encapsulated in integrated circuits, shall submitted to the procuring activity at the time of submission of proposal Approval shall apply only to the specific model proposed.

3.2 Environmental Requirements. The Regulator shall meet the environmental requirements for a Type II, Class 5, Style E equipment with the deviatio specified below.

3.2.1 Temperature and Humidity. The Regulator shall meet the conditions below:

	Temperature (^{o}C)	Relative Humidity (%)
Operating	10 to 30	95
	30 to 40	75
Non-operating	-40 to 70	Not Controlled

3.2.2 Electromagnetic Compatibility. The electromagnetic compatibility requirements of MIL-T-28800 are limited to the following areas: CE01, CE CS01, CS02 (0.05 to 100 MHz), CS06, RE01 (back panel search excluded), RE (14 kHz to 1 GHz), and RS03.

3.3 Reliability. Type II reliability requirements are as specified in MIL-T-28800.

3.3.1 Calibration Interval. The Regulator shall have an 85% or greater probability of remaining within tolerances of all specifications at the end a 12 month period.

3.4 Maintainability. The Regulator shall meet the Type II maintainability requirements as specified in MIL-T-28800 except the lowest discrete compon shall be defined as a replaceable assembly. Certification time shall n exceed 60 minutes.

3.5 Performance Requirements. The Regulator shall provide the following capability as specified below. Unless otherwise indicated, all specificati shall be met following a 30-minute warm-up period.

3.5.1 Input Voltage. The Regulator input voltage range shall be 94 to 138 V rms, minimum. The input shall be provided via an attached power cord with foot minimum length.

3.5.2 Output Voltage. The Regulator output voltage shall be 115 V rms +/- 0.15%. The Regulator shall have a minimum of two rear panel standard outp receptacles for connection of loads.

3.5.3 Frequency. The Regulator operating frequency range shall be 57 to 63 Hz, minimum.

3.5.4 Output Power. The Regulator shall provide a minimum 1000 VA continuous output power.

3.5.5 Isolation. The Regulator shall provide a minimum 100 dB common mode isolation between the input and output.

3.5.6 Output Distortion. The Regulator output distortion shall not exceed 0.2% for up to 10% input harmonic distortion.

3.5.7 Transient Suppression. The Regulator shall provide a minimum 60 dB suppression for transients up to 500 V with duration up to 10 usec.

3.5.8 Load Regulation. The Regulator output voltage change shall not exceed 0.025% for a no load to full load current change with unity to zero leading lagging power factor.

3.5.9 Line Regulation. The Regulator output voltage change shall not exceed 0.025% for a +/- 10% input voltage change.

3.5.10 Transverse Mode Rejection. The Regulator input shall provide a minimum of 60 dB transverse mode noise rejection at the input.

3.6 Operating Requirements. The Regulator shall provide the following capabilities.

3.6.1 Front Panel Requirements. All modes and functions shall be operable using front panel controls. The locations and labeling of indicators controls, and switches shall provide for maximum clarity and easily underst operation without reference to tables, charts, or flow diagrams.

3.6.1.1Display. A front panel meter(s) shall display input voltage, output voltage and output current. Meter uncertainty shall not exceed +/- 3% of f scale for voltage and +/- 5% of full scale of current.

3.6.2 Overload indication. The Regulator shall have a front panel lamp that illuminates to indicate current overload.

3.6.3 Overload Protection Circuit Breaker. Continuous overload condition shall activate a front panel circuit breaker.

3.7 Manual. At least two copies of an operation and maintenance manual shal be provided. The manual shall meet the requirements of MIL-M-7298.

3.7.1 Calibration Procedure. The manual shall include a calibration procedure in accordance with MIL-M-38793.